JANUARY, MDCCCLIII.

THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

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E. NEWMAN, 9, DEVONSHIRE STREET

TO CORRESPONDENTS AND SUBSCRIBERS.

It seems absolutely necessary to say a few words on the unusual influx of contributions during several preceding months. I quite hoped, by foregoing my Annual Address, and by publishing two numbers on the 1st of December, to have overcome the difficulty arising from press of matter: but this has not been the case, and the amount of matter in hand is increased rather than diminished. Many important and highly interesting contributions still stand over, of which some idea may be gleaned from the following summary:—

In Birds, I have communications signed E. H. Rodd (5), G. F. Webb, W. C. Hewitson, William Knapp, Edwin Brown, H. B. Tristram, George Gatcombe, and Edward Charlesworth. Among these are records of two new British birds, the rufous swallow and the sooty tern.

In Reptiles, from Colonel Steele, Alfred Newton, and Robert Coles.

In Fishes, from R. Wakefield.

In Mollusks, from Alfred Merle Norman and the Rev. W. H. Hawker.

In Insects, from Edwin Brown, C. R. Bree, the Rev. J. Johnson (2), R. Waterhouse Hawkins, H. W. Newman, John Scott, T. J. Bold, R. Sheild, R. Weaver, Thomas Boyd, J. W. Douglas, R. H. Meade.

In Arachnida, from O. Pickard-Cambridge.

In Radiata, a most valuable paper by the Rev. Geo. Gordon.

During the coming month this long list will probably be doubled, and thus a still greater delay in publication necessarily entailed.

I can see no way of obviating this difficulty except by again publishing a double number, and I have therefore to announce that Nos. 123 and 124 will appear in one wrapper on the 1st of February. No one can be more fully aware than I am of the great disadvantage of departing, however slightly, from the tacit agreement existing between the buyer and seller of a periodical as to the annual cost; and I shall cheerfully publish any objections that may be raised on this score; but let the objector, whoever he may be, bear in mind that this kingdom is in a state of unexampled prosperity, while, owing to the greatly increased demand for labour, our poor-rates are rapidly diminishing, and all other taxes are undergoing revision and reduction. I will not venture on the political ground of tracing this improvement to any supposed cause; but the facts are patent, and consequently the additional outlay involved in the proposed increased charge, *when absolutely required*, appears to me far preferable to the postponement of papers, the intrinsic value of which is beyond a question; and the prompt appearance of which is as gratifying to the majority of readers, as it can be to the contributors themselves.

LISTS OF BRITISH BIRDS.

EDWARD NEWMAN has prepared for the year 1853, three Lists of British Birds, as under:—

I.—'THE ZOOLOGIST LIST OF BRITISH BIRDS:' this has the English names only, compiled from the second edition of Yarrell's 'British Birds,' and containing all the additional discoveries up to the end of 1852. It is printed on one side only, and is intended to facilitate the exchange of specimens and eggs, and also for labelling. The price is 2s. ⅌ dozen, or 2s. 6d. prepaid by post.

II.—'A LIST OF THE BIRDS OF GREAT BRITAIN:' this has the scientific names adopted by M. Temminck, combined with the English names; and the arrangement is Temminck's. It is printed on both sides, and is intended to facilitate the exchange of specimens and eggs. The price is 3s. ⅌ dozen, or 3s. 6d. prepaid by post.

III.—THE SAME LIST, printed on thicker paper, and on one side only. It is intended for labelling specimens and eggs. The price is 4s. ⅌ dozen, or 4s. 6d. prepaid by post.

Please to observe:—

1. Not to order *less* than a dozen: for any larger number, not exceeding a pound in weight, the postage will not exceed 6d.
2. The price will sufficiently indicate the List required.
3. The amount to be paid in Postage-stamps.

THE ZOOLOGIST

FOR 1853.

Subscription for Professor Nees von Esenbeck.

Addressed to the Readers of the 'Zoologist.' By the EDITOR.

THE following circular has been printed, and sent to many of our most distinguished naturalists. The receiver of this will please to regard it as addressed to himself:—

"9, Devonshire St., Bishopsgate,
"January 1, 1853.

"That eminent and truly philosophical naturalist, Nees von Esenbeck, having been reduced to circumstances of great distress, through being deprived of his Professorship in the University of Breslau, I have the honour to inform you that, with a view to affording him some temporary relief, a subscription has been set on foot, to which I very respectfully and earnestly solicit the addition of your name.

"The following sums have been received; and it is requested that further contributions may be sent, either in cash payment, Post-office order, or postage-stamps, to my address, as above; and the receipt will be acknowledged on the wrappers of the next published numbers of the 'Zoologist' and 'Phytologist,' or in any other way the donor may require. "EDWARD NEWMAN."

BRITISH MUSEUM

	£	s.	d.
John Allcard, Esq., F.L.S. &c.	1	0	0
Dr. Balfour, F.L.S. &c.	1	0	0
William Bennett, Esq.	1	0	0
Miss M. A. Boulton	3	3	0
J. S. Bowerbank, Esq., F.R.S. &c.	1	0	0
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Samuel Hanson, Esq.	2	0	0
Professor Henslow, F.L.S., F.C.P.S., &c.	1	0	0
J. Stuart Mill, Esq.	5	0	0
M.	1	1	0
Edward Newman, F.L.S, &c.	1	0	0
John Powle, Esq.	„	10	0
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Robert Wigham, Esq., F.L.S.	1	0	0
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C. Zeyher, Esq.	2	0	0

The following letter has been received from Professor Nees von Esenbeck :—

"Breslau.

"Respected Sir,

"I have received, with heartfelt thanks, the present which, nobly sympathizing with my misfortunes, and influenced by feelings akin to my own, you have enclosed in your letter.

"This truly acceptable present not only supplies the pressing necessities of the outward man, but at the same time administers consolation to the spirit within, and gives it assurance that, although lonely and deserted in the land of its birth, and looking around in vain for sympathy there, it yet receives that sympathy from the home of freedom in the human race.

"I experience a feeling of deep shame in the neglect I have suffered in my own country, as contrasted with the kindness evinced by yours, since it argues that ours is a less noble race, less forward to assist the distressed, less powerful in freedom.

"When, however, the free man, in the spirit of a brother, offers us his hand, we press it to the heart, as I now, in thought, do yours, thanking and blessing you. Be pleased to convey these sentiments to those who have, through you, afforded me this consolation and assistance.

"I am, with sincere respect,
"Yours most devotedly,
"NEES VON ESENBECK."

"To Edward Newman, Esq.,
"&c., &c., &c."

Proceedings of Natural-History Collectors in Foreign Countries.

MR. N. PLANT.*—"San Leopoldo, long. 51° W., lat. 30° S., June, 1852.—Finding that nothing was to be collected from the sandy and treeless neighbourhood of the city of Rio Grande, I embarked on board a boat which was going up the Lagoa dos Patos to the city of Porto Alégre. The sail up the lake was both tedious and devoid of interest for the first day; but after sunrise the next morning we entered the broad river Guayba, and could see both the banks clothed with vivid green. On the north shore there rolled away into the distance a country of rounded grassy hills; but on the south side was a broad belt of shifting sand-hummocks, and beyond these a hilly country with scattered trees. I reached the city at the end of December, and after a short stay went upwards to this German colonists' village of San Leopoldo, where I remained till April. It was here that I made the greater part of the collection which has been sent to Mr. Stevens.

"San Leopoldo lies on the north shore of the little river Sinos (the Bells). It consists of three rows of houses, stretching from the river about 800 yards; the inhabitants are nearly all Germans, and very few speak Portuguese. Soon after entering this river large trees make their appearance, and a line of wood extends along either bank: beautiful creepers with variegated flowers hang gracefully from the branches of the trees down to the water's edge; and a dead silence prevails, only broken at intervals by the plunge of a capybara into the gently flowing stream, or the wild song of the boatmen.

"At San Leopoldo I staid at the house of a kind-hearted Englishman, who taught me how to manage the half-wild horses upon whose backs much of the lives of the native Brazilians seems to be spent. No one cares to walk, even on the most trivial journeys, and I soon discovered that much more could be done in collecting on horseback than on foot, for the difficulties in collecting here require great endurance and strength to keep up under their exhausting nature. One must be up an hour before sun-rise, and after a hasty breakfast of farinha mixed in coffee, saddle the horse and mount him for a ride to the nearest point of the forest, to be on the ground for the early insects. My clothing consisted of a pair of cotton trowsers, a shirt, hat and belt,—nothing more,—no shoes or stockings. I have heard some incredulous people express a doubt about Mr. Waterton's statement that he walked barefooted through the forests of Demerara; but one day's experience in these forests would be enough to confirm full belief in that gentleman's statements. Strapped to my back is a double-barrelled gun, with a pair of pistols in my belt, — according to the reports of robbers and murderers. On one side of my horse hangs the net and stick, and on the other the collecting-box. In this light costume I ride out for nine miles to the forests; dismounting and hobbling the horse so as to allow him to feed, I make my way up a 'picardo,' a road cut through the forest so as to admit three horsemen abreast: and now one soon discovers how impossible it would be to walk with shoes on. Here is a rivulet to get over, and there being no little wooden bridge across it, one must walk through it. Soon after one meets with a swamp, then a bog, and so on all day. No leather, except that sun-tanned hide which Nature has fitted so tightly over our feet, would last an hour of such wear and tear.

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* Communicated by his brother, Mr. John Plant.

"Insects are not to be met with in swarms about the forests; they are as scarce to the sight as in England, and much more difficult to capture: for should you miss securing it by the first stroke of the net, the butterfly is gone out of sight in a moment. It is but rarely that an insect is observed settling upon the ground or on the trees, and Coleopterous insects do not, — as is the case with numbers of species in England, — harbour under stones, moss, or bark; they are only seen on the wing, darting by with great rapidity. The sides of the 'picardo' are a dense mass of foliage, interwoven with a net-work of creeping plants, through which a way must be cut, so that frequently when I have had the chance of a shot at a rare bird, it will take an hour to cut into the 'mato' to the spot where it seemed to fall. I am sure that specimens of birds sell much below their value in England, considering the danger and difficulty there is in shooting them and preparing the skins. The toil in a burning sun, with the thermometer at 96°, even in the shade, — the wearying march through mud and bog, over ground strewed with thorny shrubs and dead trunks of large trees, which, as you climb over them, sink beneath you in a mass of rotten wood, displaying the nest of a spider as large as your hand (some of which I now send),—the hours of gloomy wandering in the dark forest, where you cannot see ten yards before you for creepers, — and the danger of being lost for days and weeks, as has been my own case, — are enough to enhance the price of the hard-earned specimens.

"Whilst staying at an 'Estrancia,' in the hilly country on the south side of the river Guayba, I had an opportunity of seeing numbers of the Rhea, (*Rhea Americana*); but I was surprised to find how small they looked, running along with raised wings over the campos. In the neighbourhood of the villages they are not often met with, and at all times are captured with difficulty. The Brazilian captures them with the 'bolas,' riding at full speed until he is near enough to throw it securely round the legs or neck.

"I have been a great deal annoyed, and yet amused, with a singular bird which frequents the swampy plains on each side of the rivers. From its peculiar cry the natives call it the 'Cary Cary;' I think it the Charadrius Cayanus of Latham. It is almost impossible to shoot any birds wherever this noisy sentinel is found. I was riding one day along the marshy plain, and saw a small flock of rose-coloured spoonbills quietly standing on a bank of sand about a quarter of a mile off. I dismounted, and scrambled along on my hands and knees, with my gun slung on my back, in hopes of getting within shot unobserved by them or the 'Cary Cary;' but I no sooner lifted my head above the long grass for a sight, than a whole legion of them started up, with one universal cry of Cary Cary, which sounds like 'take care, take care!' and frightened away the spoonbills. Sometimes this bird associates with a species of Saurophagus, a common inhabitant of the cleared land about San Leopoldo, and they go together in flocks. The cry of this bird is peculiar, and equally warning of danger; it is 'Bem te ve,'—I see thee well! They will often proceed with you throughout the whole day, and keeping in advance, just out of shot, will warn everything of your approach.

"Upon the highest branch of some dead tree, in the thickest parts of the forest, sits a species of shrike, of a perfectly white colour, with the bill and near the eyes of a bright green: the colonists call it the blacksmith or 'Kling fels,' — voice of the rock. It will be heard hammering and filing away, so much like a smith working on an anvil, that I have often been deceived into a belief that it was a colonist at work in the forest. After giving one or two clear metallic clangs, it imitates filing so disagreeably true, as to set one's teeth on-edge. I shot one, but could not secure it for preservation.

"Amongst others which are worthy of a hurried notice, is a species of which I send two specimens. It is found only in the dense forest, where I have often, when creeping noiselessly along, been startled by a clear voice, asking me abruptly, 'Well, what now?' — and before one can prepare to reply to the inquiry, it is repeated over and over again several times in quick succesion. This bird is very tame, and not alarmed at the report of a gun.

"N. Plant."

Mr. H. W. Bates.* — "Santarem, Amazons, April 12, 1852. — I now send you the result of three months' pretty close work at this place and neighbourhood. I sent you a box also with 1095 insects and 152 shells (January 12), valued at £30, which I have reason to believe left Pará on the 25th of February in the 'Windsor,' so it will, I hope, be in hand by this time. The present collection I cannot think a very fine lot, wanting the fine series of Diurnes which I generally send; but you must recollect it is a 'winter' collection, that is, work of the wet season, which has been very severe here, and in no locality are there many Diurnes in the wet season. You will however find some beautiful Erycinidæ, and a fine series of Sapphira, which I shall send no more of now. The greater part of these fine specimens are *bred*, I having hit upon a few broods of larvæ and chrysalides: at the present time scarcely one is to be seen,—either butterfly or larva. You will also see many new Coleoptera, but small; unfortunately the virgin forest is far from here. What I think the best part is the large series of Hymenoptera &c., which I have collected well, being only found readily in the wet season. There are very few of any new species, so I suppose they will go off well; also many small species: most are perfect. I have taken four trips already to the banks of a rivulet which flows into Tapajos, five miles from here: the forest is glorious, and teems with new and rare things. At present these are unique, and reserved in my private collection, which I do not send this time; I also have some twenty species of Hesperiæ, all unique, and about ten or twelve of other families, one of which is a new Catagramma, male and female. I hope to get a few more of these before I leave here, so as to send one box the last thing. In woods the main difficulty is the flowers; as to getting any quantity of different kinds, it would oblige me to alter my plans very much: I should have to hire two good Indians, and go to other expenses, entailing £80 or £100 a-year extra expense: but what few I can get *en passant*, I will send. I have about twenty specimens of medicines, woods and roots now waiting for the flowers. Mr. Hawxwell I hear sells most of his birds to passing travellers, and in Pará, perhaps the reason why you have not heard of him in London. I saw some excessively lovely things (I am sure some very rare) which he sold to Lieut. Horndon an American, passing through here from Lima. He gets better prices than in London. I have about fifty specimens of reptiles &c., but not enough to fill a small barrel which I wish to forward them in.

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* Communicated by Mr. S. Stevens.

"As I said, I am ready to proceed on the Tapajos voyage. I intend to go for eight months or a year, and in my own vessel, with all things as convenient on board as I can arrange, so as to be able to work, write, and sleep on board. This latter is a great thing in these rivers, where sleeping ashore is almost sure to lead to fever and ague. The glorious river stretches away southward from Santarem, with its high banks, blue hills, and white sandy shores seeming to invite its exploration. Every one from there speaks in raptures of the scenery, and the novelty of the birds and animals, and I consider myself lucky in getting hands to row me up, a matter of great difficulty in the Amazon branch rivers."

"May 8.—I left the letter unfinished until the last thing, according to custom; when in the mean time an accident happened to the vessel by which it should go, it sprung a leak, and had to be unloaded and caulked. My collection was all ready papered and packed, so I send it, just as it was ready a month ago; since then, of course, I have collected as usual, and added enough new or rare things perhaps to fill another box, but think it better to wait until the last day before I leave for the Tapajos, so as to send all, and finish with Santarem once and for all. The weather has continued drenching wet, and the river has risen much with a tearing current. Now is near the end of the wet season, and the current will soon slacken. I have a canoe very convenient either to purchase or hire, not yet decided, and two good Indian oarsmen at 9d. a-day, besides their food, and have already made acquaintance here with residents at various places up the river. If I find a good station I shall stop six or eight months at it, sleeping on board if unhealthy. The same men with two others will hunt and fish, and not be more than 4s. or 5s. a-day expense altogether. You will see a pill-box with curious small Coleoptera &c."

"Santarem, May 17, 1852.—The vessel which takes this leaves tomorrow, so I have no time to put up another box of insects. It is eight days since my collection left here, with copious letters and notes, which will be answers to your letters of December last; I now reply to yours of January 31. Santarem is not a good locality for Diurnes, not being surrounded by virgin forest: in the same period that I have been here, I could have done better in this family at Ega, as I have no doubt I did not accomplish a fourth part of what is to be done on the Upper Amazons, it is so productive a country. I am now rearing many Lepidoptera, but have failed in drawing and preserving many larvæ. In reference to the Myscelıæ being the females of Epicalia, there are in my private collection of these Epicaliæ alone three or four species thus paired, some bagged *in copulâ*, leaving no mistake about it. Having my books &c., I am now ready to be off to the Tapajos, and long to get to a good locality for butterflies again."

"Santarem, June 4, 1852.—I now forward the last box that I shall send from this place; my private collection, consisting of single specimens, amounts to about 800 species: as they keep well, and I wish to compare them with the Tapajos species, I shall not send these at present. The minute Coleoptera in pill-boxes will not keep in this climate; the plan won't answer; although I dry them in the sun for a week before boxing, they are subject to mould and mites. I now see by the books sent, how little is known of Diurnes, &c. Besides the notes sent, I find I can add a great deal of information from memory; thus you see it is important that I should find my collection complete, with all the Nos. attached, when I return. I have now taken, with this pair of hands, 1000 species of butterflies! I have now about 50 specimens of small reptiles, about 30 of woods and medicines, 50 shells, &c.: the reptiles will not yet make a parcel worth sending; the woods &c. are waiting for the flowers; and the shells (species already sent) I keep until I can fill a box equal in size to the insect-box, for the convenience of packing. I am only sorry not to have the means of taking heights of mountains, position of rivers, &c. I am likely to meet with; for the thermometers, barometers, quadrants, theodolites, and tables of formulæ which are necessary, are all quite beyond the means of a poor man like myself. What I have found very useful, are the continental annual reports on Zoology, published by the Ray Society; they fill up by the notices of new species the voids there are in other works, and by discriminating between allied species, make one very attentive not to mistake allied species for the same in collecting. Erichson is the reporter for Entomology; and you cannot imagine the pleasure afforded by his acute criticisms and discriminations; it is delightful to have such a guide. You will probably not hear from me again for several months, when I hope to send you a collection far superior to anything I have sent you from Santarem. I should have been on my voyage at present, had not an accident happened to the vessel. Yesterday I took two new Diurnes, and three new Coleoptera. Some flowers have appeared on the borders of a wood, where for months I never saw a good insect; the last few days I have taken about twenty species at them which I never saw before *anywhere*. The numbers of Celænis Dido and other Celænes, Eucides, Thecla Marsyas, and other beautiful but common butterflies at the spot is extraordinary, and would form an astonishing picture. One of the new things I took there yesterday is a new Thecla, far surpassing in silky brilliancy the beautiful blue ones I sent from Pará; there is a band of deeper blue traversing the wings, forming a startling and unexpected style of Thecla beauty.

"H. W. BATES."

Remarks on Scolopax Delamotti. By the Rev. A. MATTHEWS, M.A.

WHILE snipe-shooting on Pet Marsh, near Hastings, in the beginning of last December, I was fortunate enough to procure a specimen of Scolopax Delamotti. As I have not seen any previous notice of the occurrence of this bird in the British Islands, and as the specimen itself is strikingly dissimilar to any of its congeners which I have met with, I hope the following remarks will not be thought superfluous.

Many consider this bird, as well as S. Brehmi, to be merely varieties of S. Gallinago; but whether this is really the case, I cannot, upon the evidence of a single specimen, venture an opinion.

The principal distinction dwelt upon by those who advocate a separation of species, seems to consist in the number of the feathers in the tail. These, in the common snipe, they say amount to fourteen; and it is therefore a point worth our consideration, to determine whether this can be considered a permanent specific character. If upon a careful examination such proves to be the fact, any deviation from this rule becomes a point of considerable importance, though alone perhaps hardly sufficient to justify a specific separation. In this part of Oxfordshire, snipes are usually very plentiful; during the last few seasons many hundreds have passed through my own hands, or those of my brothers: and it has almost invariably been our custom, since we first heard of the occurrence of S. Brehmi, to count the feathers in the tail of each fresh victim; but of the numbers thus counted, not one, save the subject of the present notice, has presented any variation from the typical number (14). Occasionally indeed a feather or two may have been missing, but the reason for this has always been apparent, sometimes from natural causes, at other times from the effect of the shot; in all cases quite sufficient proof remained that fourteen would have been the legitimate complement of each tail.

It is hardly necessary to observe, that the feathers on one side of the tail correspond in shape and colour with those on the other side; thus in a tail composed of fourteen feathers, we find seven pair, each pair being precisely similar in themselves; the outermost feathers on each side forming the last pair, and the two middle feathers the first of the series. By this rule, when a tail has been examined presenting an abnormal number of feathers, the absence of one or more has been readily accounted for, even where no vestige of the plume itself remained. If then the tail-feathers of the snipe are variable in number, it appears singular that no such variation should have occurred to ourselves in the course of so long an investigation; if, on the other hand, the number of the tail-feathers be a permanent character of the common snipe, then surely a difference in this particular becomes important in distinguishing an allied species, especially if accompanied by other dissimilarities. In the specimen before us several other differences do present themselves, which it will be well to examine in detail.

Though different individuals of the common snipe vary much in the markings of the back and back of the head, yet in the plumage of all the lower parts of the body they constantly resemble each other. From the base of the lower mandible, for the space of about half an inch, the feathers are of a plain buff colour, from thence to the commencement of the breast-bone they are mottled with various shades of brown, near the latter point these markings terminate, the whole of the remaining plumage being of a pure white, with the exception of the long feathers supporting the wings when folded, which last are more or less transversely barred with black. Here the difference between this bird and its congeners would strike the most casual observer.

The mottled part of its plumage is not only much darker, and of a very different colour from any specimen of the common snipe with which it has been compared, but also *commences close to the base of the under mandible*, and *is continued without intermission over the breast-bone*, leaving *the belly alone white;* each of the breast-feathers is marked with two transverse bars of black on a white ground, extending through the whole breadth of the plume; the white part of the belly is also of an ashy tinge, exhibiting none of that brilliant purity so conspicuous in the common snipe. The plumage of the back and wings also differs widely from the ordinary varieties of the common snipe. The scapular feathers are deep black, mottled with narrow markings of dark red: they possess the usual longitudinal buff stripe, but *towards the wings are narrowly margined with ashy white*, in lieu of the wide buff-coloured marks generally seen. In this part of its plumage, however, the snipe is so liable to vary as to offer no distinctive characters. The bare portion of the tibia in this bird is much shorter than in any specimen of the common snipe which I have measured, as may be seen by the subjoined dimensions of three specimens of the latter bird in our collection.

The chief point of distinction lies, of course in the tail, and here, also, the difference is greater than has yet been noticed; not only is the number of these feathers less by two than in the common snipe, but the feathers themselves differ both in shape and size from the corresponding plumes of that species. In S. Delamotti the *first* tail-feather is nearly half an inch shorter than the shortest of the corresponding feathers in the specimens of the common snipe before mentioned: the same difference prevails throughout the tail, the feathers are also broader and much rounder at the point.

The following table will show more plainly the differences in the parts I have alluded to.

	Common Snipe, three specimens.						S. Delamotti.	
	in.	*lin.*	*in.*	*lin.*	*in.*	*lin.*	*in.*	*lin.*
Length of wing from the carpal joint to the point of the 1st quill-feather,	5	3	5	2½	5	1	4	11
Bill from base	3	0	2	11½	2	4	2	7½
First tail-feather	2	4	2	2	2	1½	1	8¼
Bare part of tibia	„	7¼	„	6¾	„	6¾	„	4¾

I have thus carefully examined this bird, not with any predetermination to convince myself of its distinctness as a species, but with the simple intention of sifting the matter thoroughly in order to attain as nearly as might be to a true conclusion. Though I have all along made use of the term "species," for lack of a more appropriate word, I am yet far from feeling satisfied, and can only hope that these observations may induce older and more experienced naturalists to turn their attention to the subject. A matter of such difficulty cannot be settled without a more thorough knowledge of it than we appear at present to possess. The points of difference are far too many and too obvious to permit a careless amalgamation of the species, while as yet they are too few to decide hastily on their separation. Time and research alone will enable us to form any correct opinion, and to them the question must be left.

In the 'Birds of Ireland' Mr. Thompson, though giving a long and very interesting account of the habits of the snipe, does not appear to have noticed these striking varieties, if indeed they may be so termed. This is much to be regretted, as few naturalists have ever enjoyed more abundant opportunities of acquiring knowledge on this head. The author, in one paragraph, mentions a fact which, properly investigated, might have furnished us with much valuable information. In the second volume of that work, at p. 271, we find this remark: — "With reference to plumage, the following note was made. 'November 16, 1833. — On directing the attention of an ornithological friend to-day to the very dark colour of two snipes received from Coleraine, he remarked that most probably they were birds bred in more northern counties; as he well recollected that all which were shot out of the multitudinous numbers which appeared in the bog-meadows in August, 1828, were peculiarly dark in plumage.' It would be singular if we could thus distinguish a foreign from a native-bred snipe."

No one who has seen Scolopax Delamotti can read the foregoing passage without the recurrence of this bird to his mind. If other specimens at all resemble the one before us in colour, the dark hue of its plumage would distinguish it among a thousand. And again, the more northern breeding-haunts alluded to suggest the inquiry,—Can this be the usual habit of S. Delamotti? But here Mr. Thompson's observations end, and his readers are left unaided to form their own conclusions.

The present rainy autumn promises a fertile field for prosecuting inquiries on this subject. Snipes made their appearance in this neighbourhood towards the end of July, and, although numbers have already come under my inspection, no variation in the tail-feathers has yet occurred.

I therefore send you the foregoing remarks, in the hope of exciting others to investigate the matter. To any who may have already done so, I would suggest that they kindly make known the result of their

observations; those who have not, I would urge to take advantage of the present opportunity, and to remember the advice of the poet,—
"Carpe diem, quam minimum credula postero."

A. MATTHEWS.

Weston-on-the-Green, September, 1852.

Reply to Mr. Doubleday's "Notes on Mr. Stephens' 'Catalogue of Lepidopterous Insects in the Cabinet of the British Museum, (Tortrices).'" By J. F. STEPHENS, Esq., F.L.S., &c.

IN your number for September (Zool. 3580) appear some Notes on my Catalogue of the Tortrices in the British Museum Collection, to which I feel it an imperative though painful duty to reply; it being evident that my friend Mr. Doubleday has, from misapprehension, "jumped to an erroneous conclusion" as to my object; and has consequently raised a series of charges against me, which having traversed "the length and breadth of the land," leaves me *no alternative* but to repel them by a thorough analysis of the points in question, which necessarily leads to the introduction of matters in connexion therewith, which would otherwise have been buried in oblivion.

I am accused, in the onset, of making "an unfair attack" therein upon M. Guenée's work on the Noctuæ, an accusation *I* most emphatically and *utterly deny*, not only *de facto*, but as wholly beyond my intention, as I state in the last paragraph of the Introduction, that my "remarks are introduced solely with a view to point out the palpable inconvenience of the proposed system,"—that deprecated in the preceding pages thereof,—"and not from any captious spirit." I have yet to learn that the quotation of examples to illustrate a subject under consideration, is indicative of any opinion of the work quoted; and regarding Guenée's, I have expressed no other than terming it "an elaborate one," which, according to my ideas, *implies commendation;* my sole object in noticing it being, as above and elsewhere shown, to furnish additional proofs in regard to my views, and thus further endeavour to resist the prevailing innovation on the nomenclature by the adoption of a new rule in one department of Zoology, "at the present time," (p. xi.):—for surely the only proper period to change the name of an animal is, when it is found to belong to the same genus as another, to which the same name had been applied, and not to anticipate an inconvenience, *which may never arise* in some groups, and can *never be remedied* by the system now attempted to be carried out; as any person conversant with zoological literature may readily perceive.

Again, had I chosen any other vehicle (the 'Zoologist,' for example) than that to which they naturally formed an appendage, my remarks might have been considered uncalled for; as it appears "the head and front" of my offence is based upon the fact of their having been introduced into a work—the nomenclature of which I was defending—"published by authority;" the interests of science being considered of minor importance!

I only received Guenée's work at the time when the Introduction was actually in type (to the extent originally proposed, namely, so far as the remarks on the Tortricidæ alone), and would have been worked off, but for an accidental delay, as your office books, Mr. Editor, can corroborate. But having noticed, during the process of cutting open the volumes, several generic names, familiar to me "as household words," applied to *new genera*, and various changes in the nomenclature of our indigenous species, as well as the wholesale alteration of the twenty-one doubly-employed names, in p. 199, vol. iii.; I availed myself of the delay in the printing, and determined to add to my Introduction, for the reason therein stated (p. viii.), that is, as "bearing upon the point under discussion:" and I feel assured that any reflecting person will allow, that I have not exceeded the legitimate bounds of propriety in so doing; for I certainly possess as much right to oppose what seem to me incorrect views, as others have to propose them, without being accused of *unfairness* in so doing:—and this right Mr. Doubleday has not failed to exercise, by adding some strictures on my 'Illustrations' to his "Notes."

Time was pressing; and I proceeded, with perhaps too much haste for minute accuracy, as it appears I made an error in omitting to observe the ? after the reference to [Phytometra] rufa,—which stands thus in Guenée's book, "= rufa Haw. Phyt. 16?"—the ? in the type employed being so like the figure 2, as to be readily overlooked—and called it *Noctua* rufa, *Haw.* (This species I prefixed to the number of examples, because Guenée had referred, *four lines above*, to my genus Cœnobia in the 'Museum Catalogue,' and the references there given would have supplied him with the dates, figures, &c., of the insect: two of my specimens of which were taken in company with Haworth's originals. I selected, at hazard, *several* other names also, although it would appear by the "Notes" that *two* only were brought forward, *viz.*, “gem*mi*puncta of Hatchet and anomala of Haworth:” but of these hereafter).

The oversight, owing to my cacography, of employing the term homonymic—not however in the original MSS.—instead of mononymic,[*] although a nominal error, has nothing to do with the point at issue, except obscuring the sense where used, and serving to *accuse those persons who prejudge* the question without adhering to the wholesome maxim of “*audi alteram partem*” first!

As among the thousand purchasers of the ‘Zoologist,’— and I am happy to find that it is supported by so large a number — there must necessarily be many who may not see the Mus. Cat., I insert, in justice to all parties, the list, complete, both of species and genera, to which I have referred, namely: —

Names adopted by Guenée.

“Nonagria despecta, *Treit.* 1825, = Noctua[†] rufa, *Haw.* 1810.
Nonagria paludicola, *Hüb.* 1816, = Noctua geminipuncta, *Hatch.* 1810.
Hydræcia vindelicia, *Frey.* 1849, = Gortyna Petasitis, *Doub.* 1847.
Noctua bella, *Bork.* 1792, = Noctua Rubi, *View.* 1790.
Genus Hoporinia, *Boisd.* 1840, = Jodia, *Hüb.* 1816, = Xantholeuca, *Step.* 1831.
Genus Gonoptera, *Lat.* 1825, = Scoliopteryx, *Germ.* 1811.
Stilbia hybridata, *Hüb.* 1814, = Phytometra anomala, *Haw.* 1812.”

GENERA.

“Phorocera	Phorocera, *Desv.* 1830.
CharidEa[‡]	Charidea, *Dalm.* 1816.
Leptosia	Leptosia, *Hüb.* 1816.
Eriocera	Eriocera, *Macq.* 1834.
Syntomopus	Syntomopus, *Wal.* 1833.
Dicycla	Dicyclus, *Walk.* 1833.
Euterpia	Euterpe, *Swains.* 1831.
Thyria	Thyra, *Dej.* 1834.
Hemiceras	Hemicera, *Lap.* 1832.
*Achantodes	Acanthodes, *Serv.* 1831.
Barydia	Baridius, *Schön.* 1826.”

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[*] Vide ‘Zoologist,’ ix. p. 3163, line 8.—*J. F. S.*

[†] Should have been *Phytometra* rufa: (*vide supra*).

[‡] Charid*i*a, a typographical error in the Mus. Cat.; Guenée has it Charid*e*a, which ought to have been ascertained before impugning my statement.

Mr. Doubleday, — to use his own expression, — is "particularly unfortunate" in the selection of the *two* names before alluded to in his voluntary defence of Guenée; and the typography of the first may show him — irrespective of what may hereafter appear on that point — how readily *such* mistakes arise and become overlooked, and of the consequent care which should be employed before raising a superstructure upon *them*. He observes (Zool. 3580) that I give in my 'Illustrations' "the *hybridata* of Hübner as the *anomaluta* of Haworth;" and then, without noticing my correction of the error of termination in the Mus. Cat., he introduces an episode, concluding with the belief that the name anomala was "first applied to this species (hybridata) in his Catalogue." A collation of the references given to the insect in question in my Syst. Cat. with that emanating from the Brit. Mus. would have shown him that the syllable *ta* was a typographical error, or *lapsus calami* rather. In my Syst. Cat. (ii. p. 111) I refer to "Ph. anomalata: the Anomalous: *Ent. Trans.* (*Haworth*) i. 336;" and in my Illustr. from the Syst. Cat. without "the book (the E. T.) before" me to Ph*y*. anomalata, *Haw.*, and not to Ph*a*læna anomalata, *Haw.* (wanting an English name), E. T. p. 337 — which last will be found in my S. Cat. ii. p. 141, No. 6622, as a synonyme to Geometra Hippocastanaria, *Hüb.*, and in the Mus. Cat. p. 206. It will also appear by my Syst. Cat. ii. 111, that I refer to Op.? anomala, (Ing. Ins. 91). The information in the work last cited having been furnished by me to Mr. Ingpen, in 1827, and then acknowledged by him. At all events, Guenée might have ascertained the point, since he quotes, as before stated, the genus *Cœnobia* from p. 134 of my Mus. Cat., and Stilbia anomala appears in p. 133!

Again, had an equally searching examination been made as to the origin of the name applied by me to Nonagria gem*ini*puncta, it would have been found that Guenée himself has referred to Haworth, 45 (p. 176, 1810) as a synonyme to N. paludicola, *Hüb.* (1816)!!

What therefore becomes of the *unfairness* charged against me, and attempted to be proved by the three instances in question?

Thus far as to the species; any alleged or real errors of mine on that or other points prove neither for nor against the position I advocate; and I admit that three out of the seven instances referred to (Zool. 3581) as "abrogations of the law," are so, and have long since been corrected in my copy of the 'Catalogue;' the other Haworthian names having been previously used, except perhaps the last (*margaritana*), — though not shown in a local Catalogue; but Hübner and

Haworth having both proposed that name for two species of Argyridia in 1812, and the former having figured a second species (the indigenous one) subsequently under the name dipoltella, I adopted this last as the most proper course to pursue.

A graver accusation is brought forward in regard to the generic names, namely, that I have referred to *pretended** duplicate generic names, and that "only *four* are really" duplicates. I beg therefore to draw attention to the list above given, wherein it will be found that *five* are *literally* identical, and a sixth (marked *) is etymologically so, though incorrectly spelt by Guenée; Serville having given the correct orthography, and employed the name as referred to in the 'Catalogue.' If "Baridia and Barydius cannot be considered identical," surely Aporophyla (uncertain Tribe) and Aporophila (uncertain Love) cannot be; consequently the Aporophila australis of Doubleday's 'List,' p. 13 and 27, thrice repeated, is not identical with Aporophyla australis — neither can Cirrædia or Cirredia be identical with Cirrœdia, the correct name, &c. &c. These examples—of pure *typographical* errors — render manifest the difficulty that exists in detecting all such errors, especially when is is stated that those above referred to are in large capitals, and several of the names have been three or four times recomposed: notwithstanding which, a charge has been made against me, in reference to my remarks in my second 'Catalogue,' that my first was full of errors, and such as the following are pointed out in corroboration thereof: —

Page 7. Pyronia, *Hüb. V.* 55, instead of 58.
„ 92. Septis, *Hüb. V.* 167, „ 243.
„ 120. Polyphora, *Hüb. V.* 273, „ 237.
Page 231. Pechipogon, *Hüb. V.* 344, instead of Pechipogo, &c.

Some of the errors alluded to not existing in the original MSS. from which the work was printed, now in my possession.

Furthermore, it is alleged that as I have in a great measure adopted Guenée's arrangement of the Tortricidæ, and availed myself of the 'Synonymic List,' I had but little comparative trouble in working up the second 'Catalogue.' To the first point I reply by stating that I have in my library a printed Catalogue, dated the 7th of July, 1820

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* The employment of this objectionable word has induced me to carefully collate the genera, and I find there are 65 duplicates — only 20 per cent. — of which no less than 45 are employed in Entomology; 34 are *literal duplicates*, and the majority of the remainder differ only in gender: and in addition there is the obviously inadmissible word "Homoptera" applied to a genus!

(thirty-two years ago), drawn up by myself, almost identical, so far as the groups are concerned, with the one recently published! And as regards the second point, the following statistics will test whether the detraction be true or not: —

	British, or reputed British Species.	Named Synonymes, about
In Guenée's 'Catalogue of Tortrices' are	235	545
Added in Doubleday's 'List,'	35	187*
	270	732
Added in Mus. Cat.	73	674
Total	343	1406

As the conclusions to be drawn from these tables are so self-evident, I shall merely observe that I was occupied, and sedulously too, for nearly six months in working up the Tortricidæ, and above three years in completing the former Catalogue: — that during this period I collated every reference, with but few exceptions, as indicated in the list of books quoted; — and arranged the Brit. Mus. and my own collections to accord therewith, introducing with the last every name, whether generic, subgeneric, specific, sexual or synonymical, so as to identify, as far as practicable, the type of each species, sex and variety intended by the respective authors: that in addition to gratuitously arranging the Brit. Mus. collection, I *gave* the MSS. of my Catalogue to the Trustees, and superintended their progress through the press, for which services they directed a special letter of thanks to be sent to me, expressive of "their sense of the liberality and zeal evinced in gratuitously undertaking the works," of which they requested I would "be pleased to accept fifty copies, as well as a complete set of their Zoological Catalogues." My experience teaches me that few persons would voluntarily have devoted so long a period of exertion, at considerable expense and inconvenience, my residence being nearly four miles from the Museum, to the public, and but for the attempted detraction I should not have alluded thereto, as it was truly "a labour of love."

Towards the end of the "Notes," Mr. Doubleday says, "With very few exceptions, Mr. Stephens has adopted my views as to species and varieties," &c. An undeniable fact; arising from a three-fold cause.

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* Most of these in my Syst. Cat.

First, twenty years' additional experience on my part, with increased attention to the Lepidoptera: secondly, from the circumstance that the original MS. of the 'Synonymic List' was sent to me by degrees, for my opinion in regard to references, &c., and our concordance or discordance adjusted accordingly, to our mutual benefit: and lastly, from having obtained, at great cost, nearly all the works procurable on the subject, for the purpose of testing the references &c. previously given (almost wholly on the authority of Haworth, who at the time my Syst. Cat. appeared, was the only person who possessed a copy of Hübner — and that an imperfect one). And I feel assured that Mr. Doubleday, with his known sense of justice, will admit the truth of my statement, and relieve me from the charge which has been made, of having "shamefully" published his List as my Catalogue. He, as well as many other of my friends — you, Mr. Editor, among the number — was fully aware that I was preparing a corrected Catalogue of our Lepidoptera, years before his was projected; hence the cause of my obtaining the expensive works alluded to, to enable me to carry out the task which I commenced in 1832, and outlived to the end; but from circumstances could not proceed with, until 1843; when I entirely remodelled the arrangement, and commenced a second Catalogue—referred to in the Address to the supplementary volume of my 'Illustrations,' in September, 1846 — which eventually laid the foundation of the one published: all these MSS. (with the successive corrections) are in my library (always, with my collections, open to the free use of entomologists), and in each convincing proof can be shown of the date of production.

Mankind are too prone to reject the ladder by which they have mounted; and perhaps I am not guiltless of doing so, inasmuch as I have availed myself of a few rundles added by my successors, in return for assistance, mostly unacknowledged, afforded by my previous labours to them. In my sixteenth year (the figures of which are *now* exactly reversed, being a sexagenarian this day — notwithstanding which I have had the temerity to undertake the task of endeavouring to arrange and catalogue the truly magnificent collection of Linnean Phalænæ in the British Museum, probably 7000 species), I prepared my first 'Catalogue of British Animals,' by which it appears that only 3673 indigenous species of insects were known at that period (1808—12), including, with the (sub-) species of Haworth &c. *then recognized*, 1367 Lepidoptera. Time progressed; and although I was wholly occupied during the day in business, and engaged in the evening in preparing the twelve first volumes of the 'General Zoology' for publication, as well as deeply immersed in studying the mysteries of Electricity, &c., I advanced so rapidly with my collections of British shells and insects, that I had more than doubled the number of the latter by 1822, and I contrived nevertheless to gradually work up the 'Catalogue of Insects,' until, on its publication in 1829, I actually registered no less than 10,116 species, — two-thirds, at least, captured by myself,—although at this time there were not half-a-dozen collections named in England, and those only partially so; and as I had no transmarine or other assistants to clear up doubtful points, possessed but a trifling entomological library, and had to ferret out the names as best I could, frequently from works in the Teutonic and other European languages,—it is not to be wondered at, that with all these disadvantages and engagements—personal and domestic illnesses, &c. — I was occasionally at fault, especially when we find that individuals who devote the greater portion of their lives to one order, group, or family of insects &c., are equally, if not, in proportion to their limited researches and better opportunities, more so.

I am at a loss to divine why the long extract from Guenée respecting my 'Illustrations' is introduced; unless to exhibit (among other things) his neglect of the numerous remarks made by me in regard to many of the supposed species (vide the genus Caradrina, Ill. (Haust.) ii. 154, and Syst. Cat. ii. 75, 76, &c., as instances), and his utter disregard of the fact that *the synonymes were to be found in the Syst. Cat.* Had Guenée however consulted Wood's 'Index Entomologicus,' he would have found *original* figures—and moreover correct ones in the main—of all the *assumed* species *of that day*, together with those of many undoubted species, to which, if described at all by him, he has given new names, although previously described by Haworth and myself.

Once more: Guenée states (Intr. lxxx.) that *the synonymy* in the Mus. Cat. accords "*en tous points*" with that established between himself and Mr. Doubleday: to show that this is not the case, the following additional instances of disagreement in the names of species alone, exclusive of synonymes,* will suffice, and at the same time add some useful information as to the synonymy, to this unavoidably lengthy paper; and also exhibit a few additional "abrogations of the law of priority," nearly coincident in number with the discrepancies between my 'Illustrations' and Mus. Cat.: and the majority being errors, I might justly reciprocate the charge of being "very careless" against M. Guenée, who has been twenty years a writer on Lepidoptera alone (*vide ante*), his first publication being dated 1832. Again; there are 111 deviations between the Noctuæ of the Mus. Cat. and the Syn. List, arising from the fact that the Catalogue of Boisduval (1840) formed the foundation of the latter, instead of the names being (as they ought properly to have been) traced to their original authors: — these are nevertheless ? coincidents "*en tous points*" *!!*

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* The proportions are about the same as in the Tortrices, p. 3737: whence therefore accrue the hundreds of additional names in the Mus. Cat. pt. i.? Which manifestly proves that Guenée made the assertion *without examination!*

SPECIES.

	Guenée.		*Stephens.*
81.	Acronycta Myricæ, *n. s.*	=	Acron. Euphorbiæ.
158.	Nonagria concolor, ext. var.?	=	Nonagria extrema.
177.	„ lutosa,	=	„ crassicornis.
306.	Mamestra abjecta, *Hüb.* 1813,	=	Mam. *St.* nigricans, *View.* 1790.
309.	„ anceps, *Hüb.* 1811,	=	„ sordida, *Bork.* 1790.
332.	Apamea fibrosa, *Hüb.* t. 385,	=	Hydræ. leucostigma, *Hüb.* f. 375.
333.	„ oculea,	=	Ap. didyma.
339.	Miana erratricula, *Hüb.* 1813,	=	Mi. literosa, *Haw.* 1810.
379.	Grammesia trilinea, *Schiff.* 1776,	=	Gr. Quercus, *Fab.* 1775.
408.	Rusina tenebrosa, *Hüb.* 1799,	=	Ru. ferruginea, *Esp.* 1784.
417.	Agrotis jaculifera, *Gu.* 1852,	=	Ag. subgothica, *Haw.* 1812.
506.	„ lucernea, *L.*	=	Gra. cataleuca, *St.*
532.	Noctua margaritacea, *	=	„ I-intactum.
572.	Pachnobia carnica, †	=	Orth.? hyperborea?
601.	Orthosia suspecta,	=	„ ? congener.
635.	Cerastis spadicea, *Hüb.* 1799,	=	Glæa Ligula, *Esp.* 1789.
649.	Xanthia *silago*, *Hüb.* 1799,	=	Xant. *flavago*, *Fab.* 1787.
651.	Cirrædia aurantiago, *Gu.* 1832,	=	Aleth. fimbriago, *St.* 1829.
662.	„ xerampelina, *Hüb.* ‡ 1806,	=	„ centrago, *Haw.* 1810.
687.	Dianthæcia *Carpophaga*. *Bork.* 1792,	=	Dian. *perplexa*, *Schiff.* 1776.
731.	Epunda nigra, *Gu.* 1852,	=	Charæas Œthiops, *St.*
822.	Hadena W-Latinum,	=	Had. Genistæ.
925.	Tamila nundina, *Dry.*	=	Acont. nigrirena, *Haw.*
984.	Agrophila candefacta, *Hüb.* 1820,	=	Erast. minuta? *Haw.* 1812.
995.	Acontia *albicollis*, *Fab.* 1781,	=	Acont. *Solaris*, *Schiff.* 1776.
1014.	Bankia *argentula*, *Hüb.* 1786,	=	Hyela *Bankiana*, *Fab.* 1775.
1016.	Hydrelia *unca*, *Schiff.* 1776,	=	„ *uncana*, *Lin.* 1761.

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* In Guenée's Index in the Annales, x. p. 239, this species is called glareosa, *Esp.* the true glareosa, *Esp.* being called Hebraica, *Hüb.*, an error that is followed in the Syn. Cat.: — but in the Noctuélites, i. 324, he has properly adopted the name glareosa, giving Hebraica, *Hüb.*, as a synonyme, after my Mus. Cat. pt. i. 78.

† Agrotis alpina, *West. & H.* 1842.

‡ Not xerampelina, *Esp.* 1786, which belongs to the same genus.

	Guenée.		*Stephens.*
1161.	Plusia *V-aureum*, * *Gu.* 1852,	=	Plu. *pulchrina*, *Haw.* 1812.
1163.	„ U-brevis, *Gu.* 1852,	=	„ bimaculata, *St.* 1829.
1173.	„ gutta, *Gu.* 1852,	=	„ confusa, *St.* 1850.
1028.	Micra candidana, *Fab.*	=	Troth. minuta.

GENERA.

Guenée.		*Stephens.*
Synia, *Dup.* 1846,	=	Oria, *Hüb.* 1816.
Laphygrina, *Guen.* 1852,	=	Telma, *Hüb.* 1816.
Cerigo, *Steph.* 1829,	=	Thalpophila, *Hüb.* 1816.
Grammesia, *Steph.* 1829,	=	Meristis, *Hüb.* 1816.
Glottula, *Guen.* 1837,	=	Brisbys, *Hüb.* 1816.
Trachea, *Gu.* 1852, *not Hüb.*	=	Panolis, *Hüb.* 1816.
Cerastis, *Och.* 1816,	=	Orrhodia, *Hüb.* 1816.
Scopelosoma, *Curt.* 1837,	=	Eupecilia, *Hüb.* 1816.
Cirrædia, *Guen.* 1839,	=	Alethuria, *Hüb.* 1816.
Tethea, *Hüb.* 1816, not typical,	=	Ipimorpha, *Hüb.* 1816.
Ilarus, *Boisd.* 1840,	=	Eremobia, *Steph.* 1829.
Jaspidia, *Boisd.* 1840,	=	Diacope, *Hüb.* 1816.
Heliodes, *Guen.* 1841,	=	Panemeria, *Hüb.* 1816.
Agrophila, *Boisd.* 1840,	=	Eumelia, *Hüb.* 1816.
Mania, *Och.* 1816, not typical,	=	Nænia, *Steph.* 1829.
Phytometra, *Haw.* 1810, not typ.	=	Prothymia, *Hüb.* 1816.

It does not appear to me that the Hübnerian generic names above quoted are more barbarous or less euphonious than their synonymes. With the above exceptions, and the location of a few of the species,* the genera adopted by Guenée compared with those proposed and employed by me, though they are somewhat differently arranged in parts, — in fact, his arrangement seems based on that of the Wiener Verzeichniss.

It is beyond my province, here, to remark upon the foreign genera and species, but as evidence that similar changes occur in them, I shall merely draw attention to the first new species, Thyatyra (as it is called, not Thyatira, *vide* Zool.) abrasa, *Gu.* No. 2, i. 12,—an insect long known and figured in England (1840) by the name T. scripta, but which is not alluded to by Guenée.

Having thus replied to the "Notes," so far as relates to the Noctuélites, — a task unwillingly and with regret forced upon me, in justification of my own character, as well as in deference to the credit of one's own country,—I have but one other paragraph connected therewith to take into consideration; namely, the opening one, in conjunction with the eulogistic review of the work, (Zool. 3532). In the first it is stated that "no work at all approaching it has ever appeared in England;" and in the review that it "is in all respects a model for future labourers in the same field,"—the context implying *as a monograph.*

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* Guenée refers to the names in *Italics*.

Whether it eclipses the fame of the world-wide celebrated 'Monographia Apum Angliæ,' with all its erudition, the care bestowed upon the descriptions of the several sections, species, &c., I leave to the candour of the reader to decide, after his perusal of the following notes, which will also tend to controvert, or modify, the opinion expressed in the review.

1. The absence of specific characters; or of any clew for readily ascertaining the species.

2. The substitution of millemétres for the usual scientific measures of length.

3. The numerous subdivisions of genera into groupes, &c.—the greater part of which are uncharacterized: *e. g.* the genus Agrotis into 13 groupes and 23 subordinate divisions, only three or four of which are alluded to by Guenée!!

4. The old species for the most part only referred to, and no descriptions annexed,—247 out of 669 in the first volume alone. (This most serious defect in a monograph, imposes upon the student the necessity of a large outlay to obtain the books requisite to ascertain the species omitted: *e. g.*, the works of Hübner alone, with their continuation, costing ninety guineas, and, except by a favourable chance, not to be procured at a lower rate!)

5. An indefensible innovation in the nomenclature: *e. g.*, in vol. i. 389, "Hoporina croceago, *Albin*"; vol. ii. 339, "Plusia V-aureum, *Engr.*"; vol. i. 43, "Acronycta tridens, *Roes.*"; none of these names to be found in the authors quoted; some of whom *wrote before* the invention of the binomial nomenclature by Linné, whose authority is quoted for Acronycta Psi, although Albin and Roesel are both referred to by Guenée:—there are dozens of such instances.

6. The omission to notice at least one-third of the works published on the Noctuæ during the past twenty-five years: of Zetterstedt—one of the most important writers—all we learn is, "M. Zetterstedt dres-

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* The genus Epunda seems to be as heterogeneous an assemblage of species as any of Hübner's depreciated groups.

sait le Catalogue des espèces de la Laponie," (Intr. lxxxvii). Of this work, so curtly despatched, it may be observed, that it is a folio volume of 570 pages, closely printed in double columns, and containing carefully drawn up descriptions in Latin of nearly 4000 Lapland insects — amongst which are 73 Noctuæ, 25 of which *are new species*, entirely unnoticed, unless by new names, by Guenée — interspersed are remarks upon at least 2000 Swedish species;—the work was published in 1840, and in the Preface, dated April, 1839, reference is made to the then recent European works (Parisian among the rest) to December, 1838. And moreover, the work itself is the *sole instance* in which all the known insects of any country have been described according to modern views, during the present century: and since its conclusion, its indefatigable author has supplied us with a still more complete work on the Scandinavian Diptera, in eleven volumes, 8vo., containing full descriptions of 3388 species!

7. The omission of the majority of the synonymes in the Index.

Reader! procure Guenée's Noctuélites, and judge for yourself whether I have stated a single point "unfairly"!

J. F. Stephens.

Eltham Cottage, Foxley Road, Brixton,
September 16, 1852.

P.S. — A concluding question, if not an "unfair" one. In what part of Scotland do Cœnophila subrosea and Agrotis lunigera, *Mus. Cat*. occur? Guenée says "Angleterre et Ecosse, en Juillet" (i. 333) for the former, and Ecosse (i. 280) for the latter.—J. F. S.

[Since the proof of this paper was sent to its author, that gifted entomologist has breathed his last: it is therefore published without that revision and careful correction which it would no doubt have received from his experienced hand. I have never seen a paper from the pen of Mr. Stephens in which this revising process was so essential, since it abounds with assertions as to simple facts which must either have been penned from memory, and without reference to the authorities cited, or the writer's meaning must have been misunderstood in the printing-room. I allude to such passages as this: —

"*Guenée*.	"*Stephens*.
"995. Acontia albicollis *Fab*. 1781, =	Acontia solaris, *Schiff*. 1776."

On reference to Guenée, it appears that that author gives these as distinct species without doubt or hesitation, and that he occupies nearly two pages in elaborately describing their differences. From the line quoted, as well as from the context, it would appear that the names are synonymous, but that Guenée has not adopted the earlier one: it is evident that Mr. Stephens overlooked the second species and the long diagnosis, an oversight which, in common with the rest, it is now unfortunately too late to remedy. It is scarcely necessary to say that the pages of the 'Zoologist' are closed for ever against a continuation of the discussion of which this paper forms a part. I have not the slightest idea that any will be attempted, but I think it desirable to give this early decision on the subject, lest any of my correspondents should incline to controvert the statements of one no longer able to defend or explain them. Mr. James Francis Stephens died at his residence, Eltham Cottage, Foxley Road, Brixton, on Wednesday morning, the 21st of December, in the sixty-first year of his age, after a short but very severe illness. He was a Fellow of the Linnean and Zoological Societies, and a Member of the Entomological Society and Entomological Club: he was also the author of a large portion of Shaw's 'British Zoology,' of the well-known 'Illustrations of British Entomology,' of a 'Systematic Catalogue of British Insects,' a 'Manual of British Lepidoptera,' 'A List of the Specimens of Lepidoptera in the British Museum,' Parts I. and II. (the third part still in the press), and various minor papers scattered through our periodicals, but chiefly in the 'Zoologist.' He will however be most favorably known to the large circle of British entomologists who enjoyed his acquaintance, by the unbounded and long-continued liberality with which his enormous collections and extensive entomological library were placed at their disposal, and by the untiring courtesy and attention with which he imparted his great knowledge of Entomology, and assisted every seeker for information in the extensive science in which he had become so proficient. This trait in the character of the departed entomologist, is worthy of our warmest admiration and gratitude, and must be lastingly impressed upon the memory of all who, during the last thirty years, had occasion to seek instruction at his hands.—*Edward Newman.*]

On "Robber-bees:" the Phenomenon thus denominated attributed to the Presence of the Honey-moth. By Octavius Pickard-Cambridge, Esq.

On the 15th of last September, our gardener came to me, in great tribulation, to say that "the robbers" were attacking one of my bee-hives. I immediately went to see the state of affairs, and found a great commotion at the mouth of the hive, bees hurrying in and out, crowding and tumbling over one another, some fighting, and a few, dead, lying on the ground (this was a wooden box-hive); and on drawing back the shutter of the window the same state of commotion and excitement prevailed within. A very few minutes' observation showed me that the cells were being opened, and the honey extracted; and also that the young bees were being brought out of the hive, and carried off. So my first operation was to stop the entrance entirely, with a zinc slide; and, this done, the bees now congregated in clusters, trying every crevice and corner to effect an entrance; (this was about 5 p.m.) The commotion inside still continued; and, wishing to see what would become of the swarms of bees collected outside the hive, I remained watching till it grew dusk, when they began to fly away, mostly, as far as I could see, *in one direction*, until, by dark, not one remained. I left the entrance still stopped by the slide; and by daylight next morning the bees began to return, making furious efforts to get inside, tumbling and fighting as before; and by 8 a.m. the front of the hive was crowded as on the previous evening, the bees inside seeming as anxious to get out as those outside to get in. This state of things existed the whole day; and just before dark, when the last of the bees outside had taken their departure, in the same manner, and apparently in the same direction as before, I drew back the zinc slide, which was no sooner removed than the inhabitants poured out, as thick and fast as the aperture (two inches wide) would admit, and flew straight away, in exactly the same direction as all those outside had previously taken. Not knowing what to make of this, and while they were still pouring out, I again inserted the slide, and left them for the night.

The next morning, by daylight, the same scene of riot and confusion was enacted, and continued throughout the day, the bees outside all departing, just before dusk, as on the previous evening; and on my again pulling out the slide (which had been in the whole day), immediately the bees issued out again, flying off as before, until quite dark, when I re-inserted the slide.

Having in the mean time consulted all the parish authorities on bee-keeping, their opinion (the prevalent one here) was, that the hive was attacked by strange bees, or "robbers," who would continue to return and renew their attacks as long as the hive remained in its place with a bit of honey in it; and that probably the bees that left the hive every night on my withdrawing the zinc slide from the entrance, were some of the robbers who had got inside previous to my discovering the state of the hive, on the 15th, and they, having been sorely ill-treated by the lawful inhabitants, were glad to make their exit and escape on the first opportunity. All this seemed plausible enough, especially as the hive became quieter and quieter after each efflux, and, as far as I could see through the windows, no more cells had been tapped; but the combs were full, and so far as perfect as at the end of the first day's row; though, outside, the bees seemed more numerous, and as eager to get in as ever.

This explanation did not satisfy me, for on a close examination there did not appear to be more than a hundred or two bees left in the hive; so I resolved to put it to the test, by killing, the next morning, as they arrived, *every bee* that came to renew the attack, all of which, according to the popular opinion, were the "robbers," and which, being got rid of, the usual work of the hive would of course proceed without molestation. So the next morning, by day-break, I commenced the slaughter, and in the course of a few hours had killed thousands, the ground becoming black with the slain, and so continued to kill them until they ceased coming. By this time the slain must have amounted to nearly as many in number as is contained in an ordinary swarm. However, the next day a few still came, and were also killed; and I determined that when evening came the hive should be fumigated with fungus-smoke, and the state of the hive, and number of inhabitants, ascertained. This being done, by inserting the nose of a pair of fumigating bellows into the entrance of the hive, so as to preclude the possibility of any bees escaping, and having removed the hive, I found my conjectures correct, for there were not nearly 200 bees in it, and no queen among them. As in this state of things it was useless to restore it to its place, I killed these few bees; and, with the exception of the bottoms of the combs being a good deal gnawed (the dust and crumbs of which were strewed about the floor-board), I found very little honey gone, and the combs apparently sound and good, the hive, as it stood, weighing 40 ℔s., of which the hive itself was 12 ℔s. weight.

Now, the question is, Where were all the lawful inhabitants of the hive? The "robbers" were certainly all dead; but they had not killed the inhabitants, as when the first alarm was given, though there *was* fighting, yet there were not probably more than one hundred or so dead ones lying about; and the nature and habits of bees in defence of their property precluded the idea of their having been previously expelled by the robbers without a severe struggle, which must have caused the death of myriads on both sides. In fact, the parish bee-keepers could make nothing of it!

This "Eating out of hives by robber-bees," as it is here called, is by no means of rare occurrence; and a cottager with fourteen or fifteen hives, full and in good condition, at the beginning of September, thinks himself well off to escape with the loss of two of his hives. When thoroughly eaten out, the very comb is often gnawed to pieces, and strewed about in front of the hive. I have known *one* cottager lose four out of ten hives in the course of a few days; and I have myself lost one or two out of about the same number every year since I have kept bees; and what I saw last year on the occasion of losing a box-hive, thoroughly ransacked and eaten out *in one day*, between the hours of 11 and 5, made me suspect the commonly received notion of "robber, or stranger, bees," and induced me to watch the process closely at the first opportunity. This hive (lost last year) was perfectly quiet, to all appearance, at 10 a.m. By 11, exactly the same scene of riot and disorder that I have detailed above prevailed; and when I came to examine it at 5 p.m. (not having been able to be on the spot during the interval), the hive was completely deserted, with not a bee or drop of honey in it, and the whole fabric of combs a complete wreck, and a few, perhaps 200, dead bees lying round. As it happened, all my hives had been weighed a night or two before; and this one was upwards of 45 ℔s. weight, and, being only of one year's standing, I have no doubt contained 24½ ℔s. of pure honey. A large bell-glass on the top of the hive, also nearly full of honey, was completely pillaged, and the comb, being fine and tender, literally reduced to powder. Thus, here was this great quantity of honey carried off, and all the damage done, during the short space of a few hours. The aperture in this hive was nearly five inches wide, which would afford additional facility for carrying off the honey, and so may account for the very short space of time in which it was done, though I have heard of several other instances in which the operation has been equally short and decisive. I have never heard of a case in which, after this commotion had commenced at the entrance of a hive, and nothing done until all was quiet again, there has ever been an atom of honey saved, or a bee left in the hive, nor more killed than the few I have described. The common practice among the cottagers is, the moment the "sound" of robbers is heard, and a commotion and fighting is observed at the entrance, to cover the whole hive completely, with cloths, and, having killed all the bees collecting round it, ***burn in*** the hive, the same evening; and accordingly, as the row has been discovered earlier or later after its commencement, more or less honey is generally saved; and as, among the lower classes of bee-keepers, there is seldom, if ever, the means or ability to make close observations on the process of "robbing a hive," this opinion of "robbers" has always been, and still is, implicitly believed among them. The sound just spoken of is very peculiar. Instead of the busy hum commonly heard near the bee-garden, you may see numerous bees shooting backwards and forwards, with great velocity, to the extent of sometimes one or two hundred yards distance, with a sharp, ringing hum, which, once heard, can never be mistaken, but is difficult to describe.

Now, my own idea, and the only way in which I can account for most of the circumstances I have related, is, that, for some reason or other, the bees find it necessary to quit the hive, and having left it, and found out a new and more suitable abode, return, to transfer to it the stores of honey in the objectionable hive. The smell of the honey, which, when the cells are opened, is extremely strong, would be sure to attract other bees from neighbouring hives, and possibly from those immediately contiguous; and hence what small degree of fighting and slaughter there *actually is* would be accounted for; and on this supposition the only difficulty is, to find out why the bees should leave an apparently sound and comfortable abode.

Now, in the autumn of 1849, I had a hive eaten out in this manner; and on cleaning out the empty comb it was thrown by, into a box, and forgotten, being of no apparent use or value. However, in the spring following, wanting to make use of the box, I was proceeding to turn out the contents, when I found it alive with the larvæ of the honey-moth (*Achroia alvearia*), which by August produced myriads of the perfect insects. These, depositing their eggs, gave birth to thousands more larvæ, which, increasing both in size and number, had by the summer of 1851 completely consumed the whole of the comb. There was a peculiar smell attached to this comb, which I observed both at the time it was "eaten out" and until consumed by the honey-moth; and I have observed the same smell in all the hives I have since had "eaten out;" but unfortunately all the comb, except that of the hive of which I have given the above detail of the process of "eating out," was destroyed without my knowledge; so I was unable to ascertain whether it also produced these insects. However, having, this year, saved the empty comb, I shall carefully watch whether it produces them or not; and if this should be the result it will go some way towards proving that the bees were aware of the attack of this insidious and formidable enemy, and had evacuated the premises before all the fruits of their labour should be destroyed, and themselves starved out; and this may prove one of the numberless striking instances of the wonderful instinct with which bees, in common with all the rest of the unintelligent creation, are endowed, for their safety and preservation, as man is endowed with reason, *i. e*, the ability to compare, judge, and act upon the evidences of his senes, for his preservation.

I should feel under great obligation to any of your correspondents or readers who may be able either to confirm or the contrary my theory of "robbers," and whether the facts I have detailed are prevalent all over the country, and what are *their* conclusions from those facts, and if there is any remedy against being "eaten out;" in short, anything they may have observed in the matter.

The old bee-keepers here say that no such things as "robber-bees," in this way, were known twenty-five or thirty years ago, but that it is quite of recent date (though I am unable to find out precisely what that date is). If my theory of the honey-moth is correct, its recency would be accounted for, by the fact that this insect has been, until within a few years, accounted rare by entomologists, and, being so, would hardly have had much effect in bee-hives; but for some few years past it has become very common, and consequently would be proportionably destructive. I have never yet detected, in this neighbourhood, the honeycomb-moth (*Galleria cereana*), which has, I believe, in some places been found to be very destructive among bees, and was bred in large numbers by Mr. Doubleday, of Epping, some nine or ten years ago. It would be interesting, and a great gratification to me particularly, if any of your correspondents or readers could inform me of the manner in which the attacks of this last insect on bee-hives are conducted, and how they are received by the bees; and this might possibly throw some light on the present case.

OCTAVIUS PICKARD-CAMBRIDGE.

Bloxworth House, Blandford, Dorset,
November 27, 1852.

P.S.—I omitted to state, in the above account, a curious circumstance, *viz.*, that throughout the whole operation of watching the hive, and killing all the bees (the aromatic smell of whose bodies was peculiarly strong and disagreeable), not a single bee *gave any sign of irascibility*, their *whole aim and attention being to get into the hive.* Now, under ordinary circumstances, as I have frequently found, to my cost, the slightest meddling with the hive, and sometimes even standing close to it, much less *killing the inhabitants*, is sufficient to bring numbers of angry bees dashing about you, with that peculiar sharp-sounding flight called by the villagers here "coming at you spitishly."—O. P.-C.

Proceedings of the Zoological Society.

November 23, 1852. — DR. GRAY, Vice-President, in the chair.

The Secretary exhibited a series of skulls of the gouwa (*Bos frontalis*), commonly called "the bison" by the English in India. These skulls had been presented to the Society by Capt. Wycliffe Thompson, 10th Royal Hussars, who had himself collected them in the Western Ghauts, or Sukyadri Mountains, expressly for this purpose. The skulls represented an adult bull, a cow, and a younger animal. They formed the subject of a very interesting communication, addressed by Capt. Thompson to the Secretary, in which he narrated the result of his hunting reminiscences while in pursuit of several herds, in the hope of obtaining a pair of living calves, which he had, at the request of Colonel Perronet Thompson, been desirous of capturing and adding as a gift to the Society's collection. The range of the gouwa appears to be exclusively confined to the Western Ghauts, a narrow belt of wild, broken, and thickly wooded country, dividing the highlands of the Deccan from the lowlands which border the margin of the sea. The gouwa attains an enormous size, old bulls being currently estimated as measuring nineteen hands at the shoulder, with a corresponding weight, notwithstanding which they crash through the jungle when fairly alarmed, at a very rapid pace, making their progress visible by a long track of waving branches tossing above them like the wake of a ship at sea.

Mr. Cuming communicated the description of a new species of Hyrax, discovered in Fernando Po, by Mr. L. Fraser, H.M. Vice Consul at Whidah, and named by him Hyrax dorsalis.

M. Deshayes presented to the meeting the description of twenty new species of Cardita, from the collection of Mr. Cuming.

Among the objects placed on the table for exhibition, was a magnificent head of Ovis Vignei, from Persia, the property of Mr. Burckhart Barker.—*D. W. M.*

Proceedings of the Entomological Society.

December 6, 1852.—J. O. WESTWOOD, Esq., President, in the chair.

The following donations were announced, and thanks ordered to be given to the donors:—The 'Zoologist' for December; by the Editor. The 'Athenæum' for November; by the Editor. The 'Literary Gazette' for November; by the Editor. 'Proceededings of the Royal Society,' Vol. vi. No. 88—90; by the Society. 'Journal of the Society of Arts,' No. 2, and 'List of Subjects for Premiums;' by the Society. 'Description of a new Hemipterous Insect, Atelides centrolineatus, forming the Type of a new Genus,' by W. S. Dallas, Esq., F.L.S.; by the Author. Specimens of Pytho depressus (3), Cetonia ænea (4), Libellula arctica (2), Ctenophora atrata (2); by Mr. Weaver. A box of British Lepidoptera; by Mr. Douglas. Specimens in illustration of the metamorphoses of six species of Strepsiptera from Albania; by Mr. S. S. Saunders.

Henry Tompkins, Esq., of Lewes, was elected a Subscriber to the Society.

The President exhibited some new Coleoptera from Ceylon and China, from the collection of Major Champion.

Mr. F. Grant exhibited a male Lucanus Cervus, of which the right hind leg was much smaller than the left one; a remarkable variety of Triphæna janthina; and a long series of Peronea rufana, illustrating the variation of the species.

Mr. Douglas, on behalf of Mr. H. Cooke, exhibited a remarkably dark red variety of Hypochalcia ahenella, taken at Hastings.

Mr. Edward Sheppard exhibited some English ship-biscuit that had been a voyage to America and back, infested with Stene ferruginea and a species of Apate.

Mr. S. Stevens exhibited a remarkable variety of Vanessa Urticæ, bred from a larva taken near London; a specimen of Pieris Daplidice, taken by E. C. Buxton, Esq., at Holme Fen; and an example of Notodonta tritophus, captured in Scotland, from the collection of the same gentleman. He also exhibited a specimen of Monochamus Sutor, found on the banks of the Regent's Canal; one of Pogonocherus fasciculatus, bred from the hoop of a cask; and a selection of Coleoptera and Lepidoptera from a collection just received from Mundo Nova, Rio Grande, where they were captured by Mr. Plant. Many were rare or new, and all were in fine condition.

Mr. Waterhouse observed that many of the species were also found at Rio Janeiro, about 500 miles north of this locality, but there was a perceptible variation, although not amounting to specific distinction, between the insects of the two places.

The first part of an interesting and valuable memoir by S. S. Saunders, Esq., was read, entitled "Notices of some new Species of Strepsipterous Insects from Albania, with further Observations on the Habits and Transformations of these Parasites," in which several unknown points in the economy of these insects are elucidated.

Mr. Douglas read a continuation of his "Memoir on the Natural History of British Micro-Lepidoptera," the genera Gracillaria and Lithocolletis being illustrated by descriptions of the larvæ and their economy of three species of each genus, accompanied by coloured drawings by Mr. Wing.

The Secretary read the following remarks from a note accompanying Mr. Weaver's donation:—"The Ctenophora pectinicornis I procured from hard undecayed stumps of trees, in which the larvæ make deep round holes, working quickly up and down them at their pleasure, and taking care to form an opening for the imago to emerge."

The President read a letter from Mr. James Crook, Turton, near Bolton, Lancashire, offering certain northern Lepidoptera in exchange for southern species.

The next part of the Society's 'Transactions,' it was announced, would be ready in a few days.—*J. W. D.*

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The following Report will appear in its proper place in our next number.

Proceedings of the Microscopical Society.

June 23, 1852.—GEO. JACKSON, Esq., in the chair.

A paper by Professor Williamson, entitled "Further Contributions to the Structure of Volvox globator," was read.

The author's views with respect to the cellular nature of certain appearances in Volvox globator, as detailed by him in the 'Transactions of the Philosophical Society of Manchester,' having been controverted by Mr. Busk in a paper lately read to this Society, and as subsequent researches have, in Mr. Williamson's opinion, confirmed his former statements as to the cellular structure of that organism; he considered it necessary to lay before the Society the present paper, containing some account of the observations by which he considers he has established the correctness of his former assertions. The object of the paper was therefore to adduce proofs, not of the vegetable nature of Volvox globator, for on that point both gentlemen agree, but of the cellular nature of certain appearances in that body. The author described the hexagonal cells which form a peripheral stratum in the Volvox as being exceedingly difficult to detect in the living organism, and gave an account of their various appearances under different circumstances, stating also that difference of locality alone is sufficient to produce very varied appearances, as well as differences in the time of the year. The radiating threads which connect the cells were described at great length and minutely detailed, and the conclusion arrived at was that these threads consist partly of the ductile mucilaginous membrane of the protoplasm, and partly of its contents, the latter being present in various proportions. He also instituted a comparison between the cells in certain Ulvaceous plants and those of Volvox, and stated that he considered the vesicles of the latter to be of precisely the same character as those of the former, and consequently that they are, in every sense of the word, real cells. The author next investigated the origin of the superficial pellicle of Volvox, which he considers as formed by the consolidation of the cell-walls; and then proceeded to endeavour to determine the relative periods at which the cells, the superficial pellicle, and the cilia are developed, and expressed his opinion that the cilia are the first to make their appearance, the cells and outer pellicle being subsequent growths. The nature of the fluid within the Volvox formed the next subject for discussion; this he considers not to be water, but apparently mucilage. He then pointed out the close analogy that exists in the development of Volvox globator, and that exhibited by many of the lower Algæ and Confervæ; and concluded by expressing his opinion that every fact brought to light by this inquiry tended to confirm his previous conclusions, namely, that the affinities of the Volvox are with the vegetable rather than with the animal kingdom.

October 27, 1852.—GEORGE BUSK, Esq., in the chair.

A paper by Joseph Delves, Esq., "On the Application of Photography to the Representation of Microscopic Objects," was read. After some preliminary observations the author stated that the only arrangement necessary for the purposes of photography is the addition to the microscope of a dark chamber, similar to that of the camera obscura, having at one end an aperture for the insertion of the eye-piece, and at the other a groove for carrying the ground glass plate. This dark chamber should not exceed 18 inches in length, as, if longer, the pencil of light transmitted by the object-glass is diffused over too large a surface, and a faint and unsatisfactory picture is the result. Another advantage is that pictures at this distance are in size very nearly equal to the object as seen in the microscope. The time of producing the picture varies from 5 to 15 seconds. The author also made some remarks upon the mode of manipulating, and concluded by calling attention to some very beautiful specimens that were afterwards presented to the Society.—*J. W.*

TO SUBSCRIBERS AND THE BOOK TRADE.

Owing to the unusual quantity of communications on hand, I am compelled to publish a double number on the 1st of February. It will be charged *Two Shillings.*

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Proceedings of Societies. — Zoological Society, 3751. Entomological Society, 3751.

On the 1st of January, 1853, will be published, price 10s. per Annum,

BONPLANDIA. A Botanical Semi-monthly Periodical, the Official Organ of the Imperial L. C. Academy Naturæ Curiosorum. Edited by Berthold Seemann, F.L.S., Member of the Imperial Academy Naturæ Curiosorum.

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